

Gulf of Alaska

- a. Integrated Ecosystem Research Project
- b. Starting point for physics

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Overarching Question:

How do environmental and anthropogenic processes, including climate change, affect trophic levels and dynamic linkages among trophic levels, with emphasis on fish and fisheries, marine mammals, and seabirds within the Gulf of Alaska?

GOA-IERP: Components

LTL- Lower Trophic Level: Russ Hopcroft

Ann Matarese, Calvin Mordy, Jeff Napp, Miriam Doyle, Janet Duffy-Anderson, Phyllis Stabeno, Suzanne Strom, Nancy Kachel, Peggy Sullivan

MTL- Middle Trophic Level: Olav Ormsteth

Alex DeRobertis, Chris Wilson, Johanna Vollenweider, John Home, Shiway Wang, Suzanne Budge, Kim Rand, Mike Guttormsen

UTL- Upper Trophic Level: Jamal Moss

Franz Meuter, Jon Heifetz, Leslie Slater, Mark Zimmermann, Ron Heintz, Shannon Atkinson, Jane Reid, Nadine Golden, Kalei Shotwell, Jason Waite

Modeling- Georgina Gibson and Sarah Hinckley

Al Hermann, Carol Ladd, Katherine Hedstron, Ken Coyle, Sarah Gaichas, William Stockhausen, Carolina Parada

Climate, cross shelf vs. along shelf transport, settlement, spatial differences (west vs. east), temporal differences, interactions among species.

Five Indicator fish species

- Walleye Pollock



- Pacific Cod



- Arrowtooth flounder



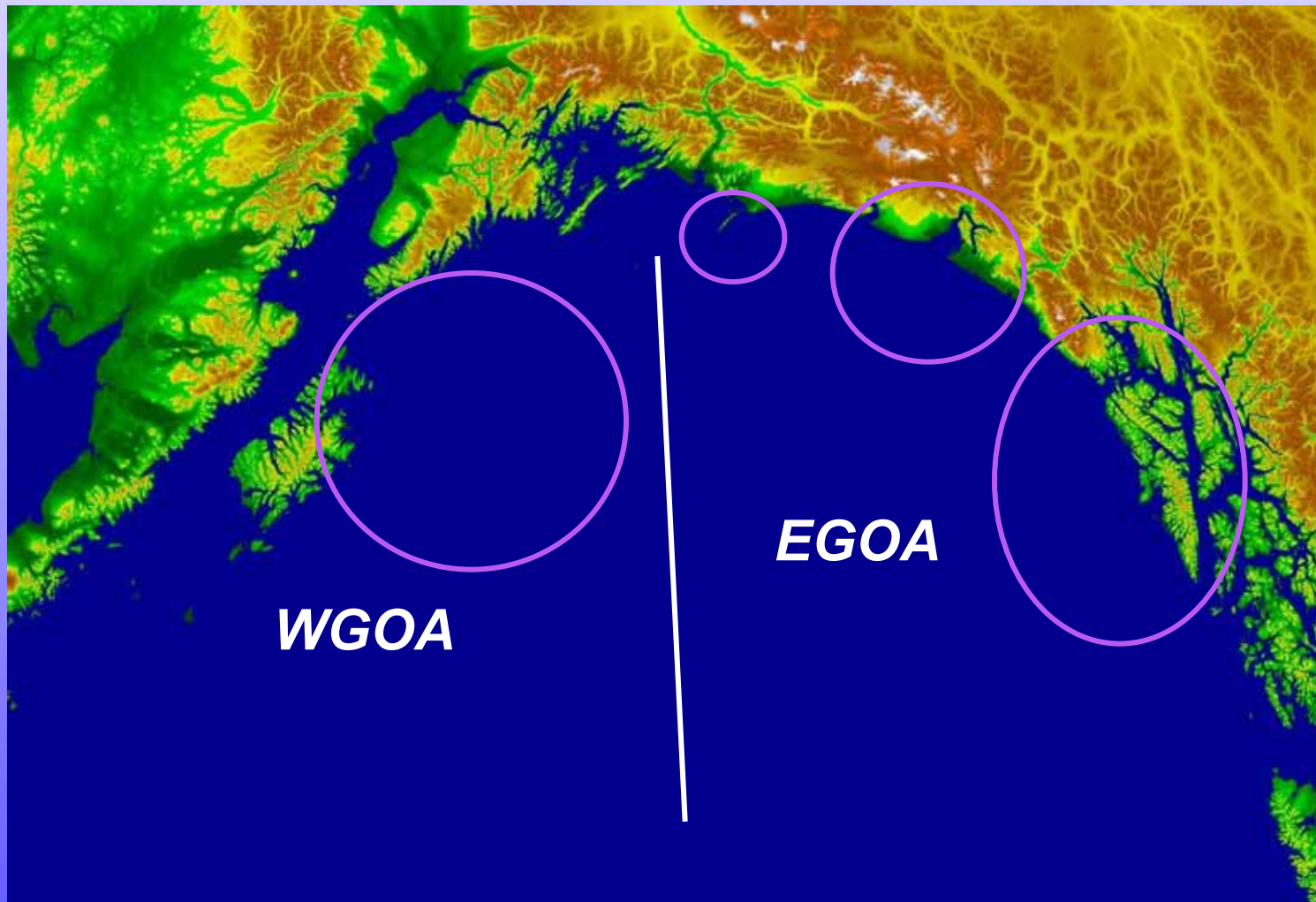
- Pacific ocean perch (rockfish)



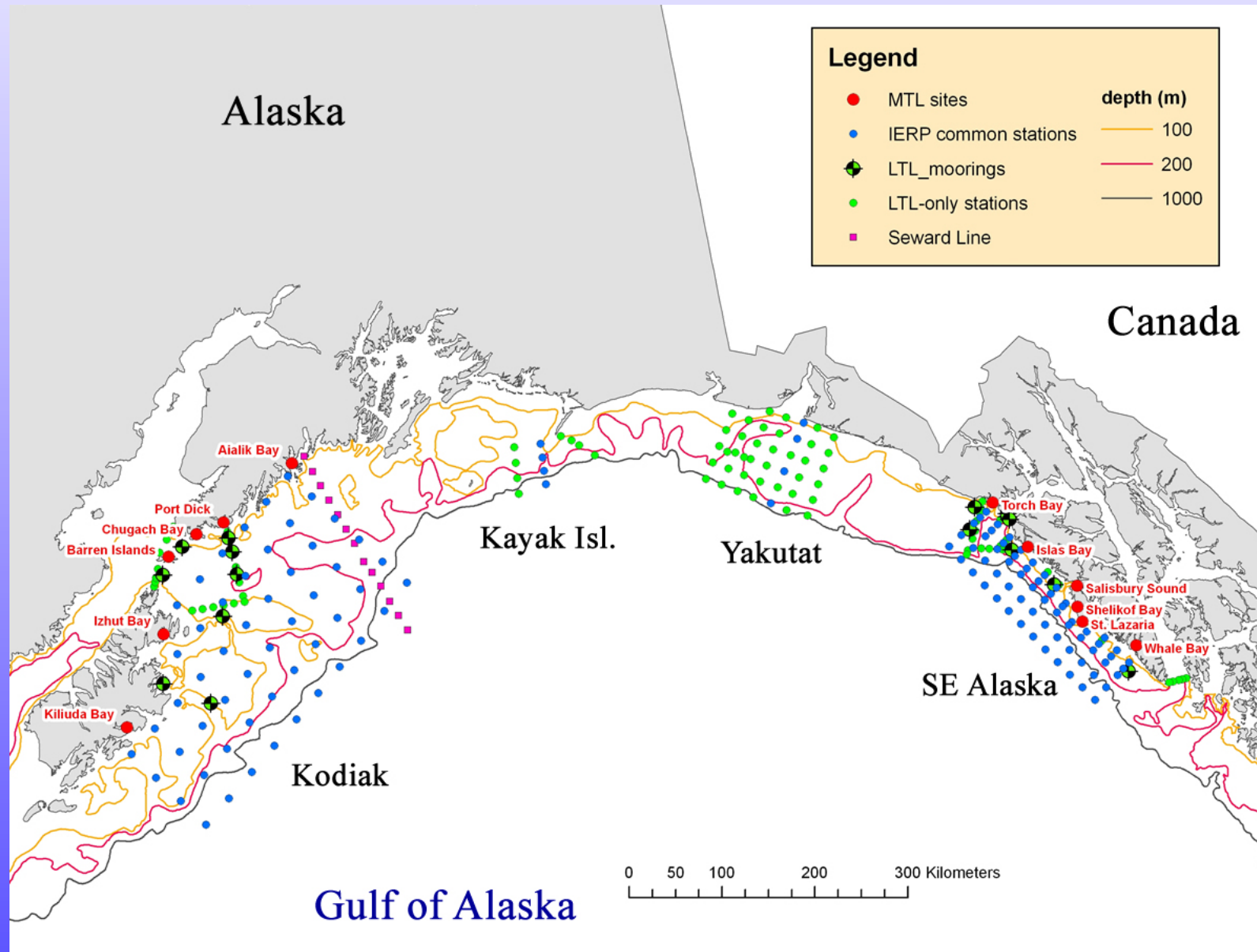
- Sablefish



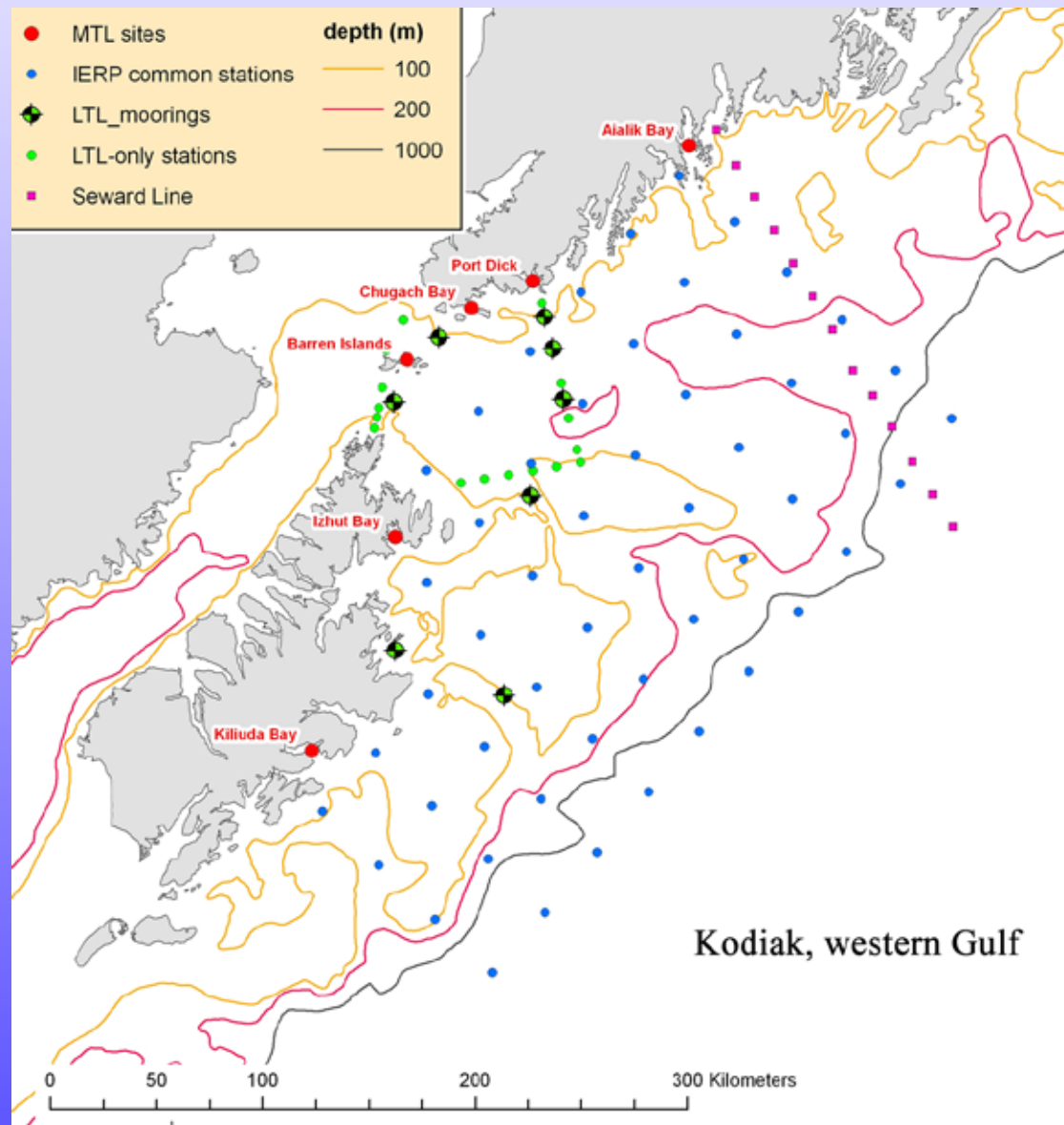
Where



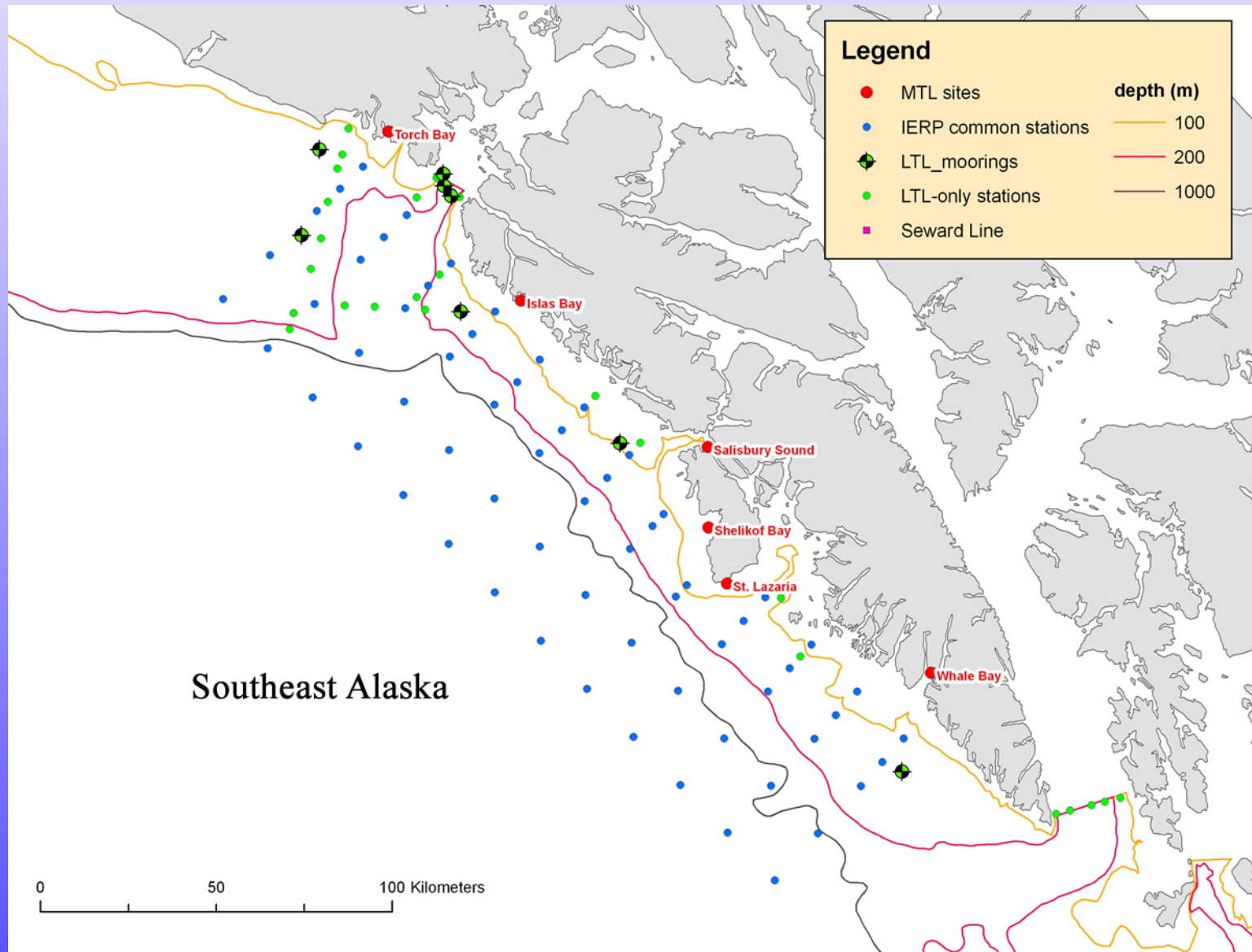
Study Plan: Four Areas



Western Gulf - Kodiak



Southeast Alaska



Calendar

2010 - Planning

2011 - Field season

2012 - Analysis/Planning

2013 - Field season

2014 - Analysis

Modeling 2011 - 2014



Field season

March: ?? - ?? ?????? Deploy moorings (EGOA)

April: 15 - 30 XXXX (EGOA)
 13 - 30 R/V Thompson (EGOA)
 25 - 30 Tiglax (WGOA) Deploy moorings

May: 1 - 15 XXXX (WGOA)
 1 - 11 Tiglax (WGOA)

July: 1 - 24 F/V Northwest Explorer (EGOA)
 1 - 15 XXXX (EGOA)
 15 - 31 XXXX (WGOA)

August: 1 - 25 F/V Northwest Explorer (WGOA)

September: 2 - 23 F/V Northwest Explorer (EGOA)
 15 - 31 XXXX (EGOA)
 24 - 30 F/V Northwest Explorer (WGOA) (cont)

October: 1 - 14 F/V Northwest Explorer (WGOA)
 1 - 15 XXXX (WGOA)
 ?? - ?? - Dyson or Crab boat or Fishing boat or ?????? (EGOA, WGOA)

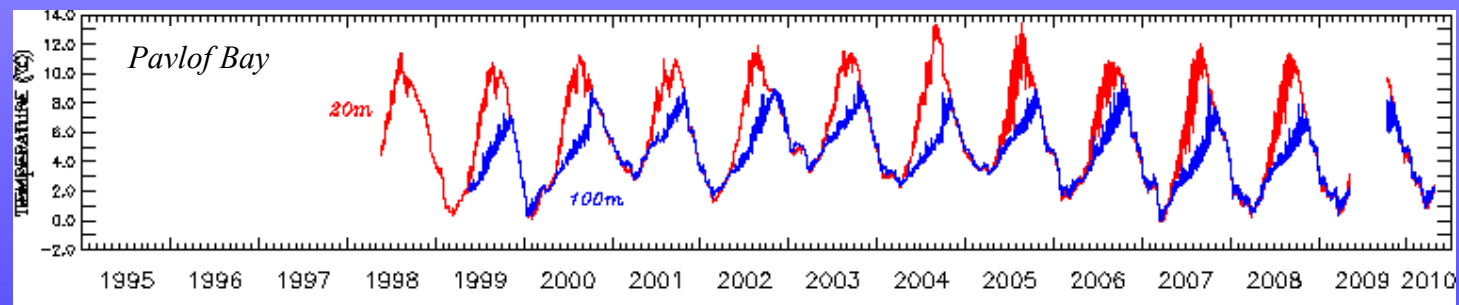
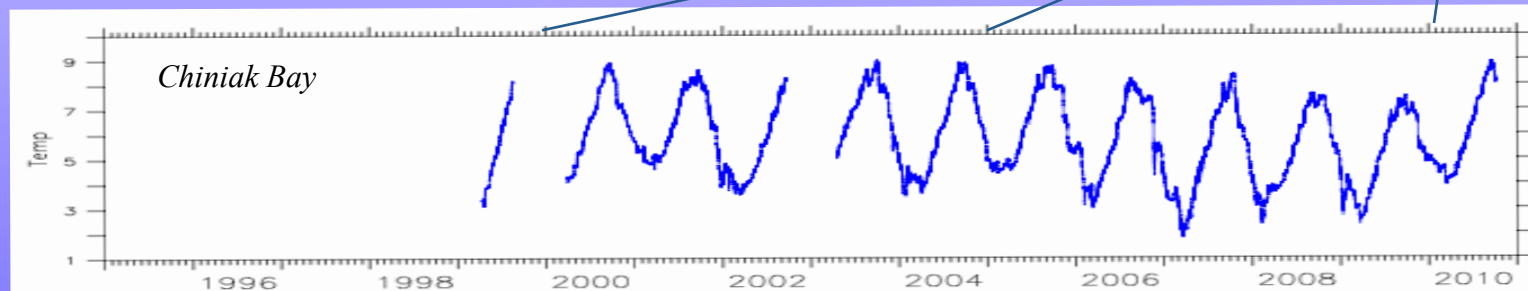
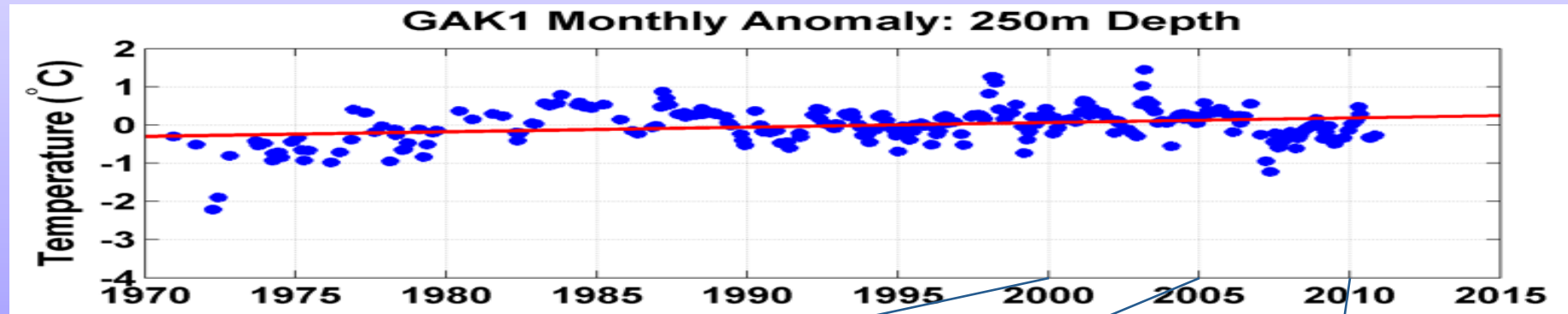


Physics: Currents and Temperature

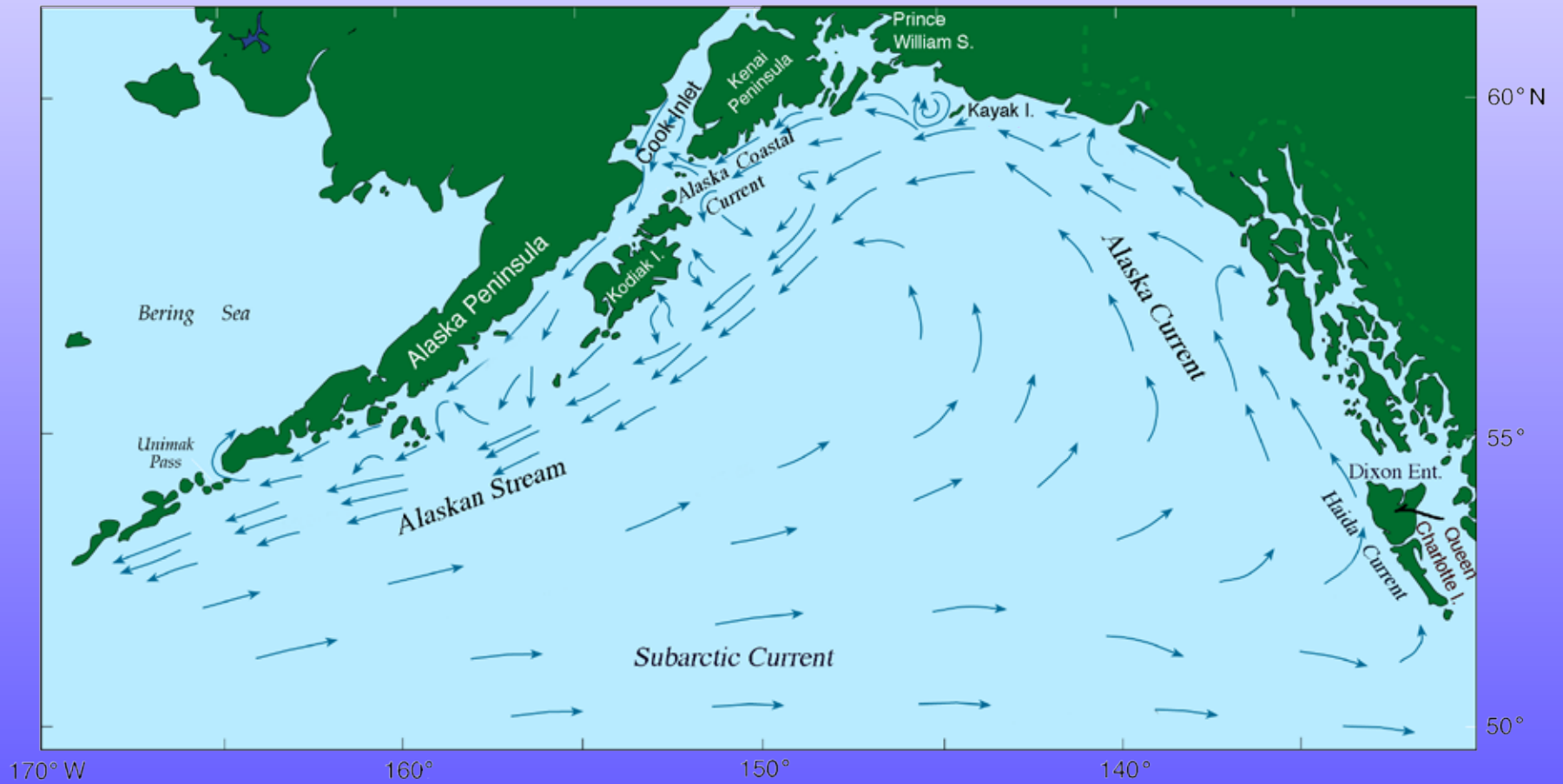
Where are we?



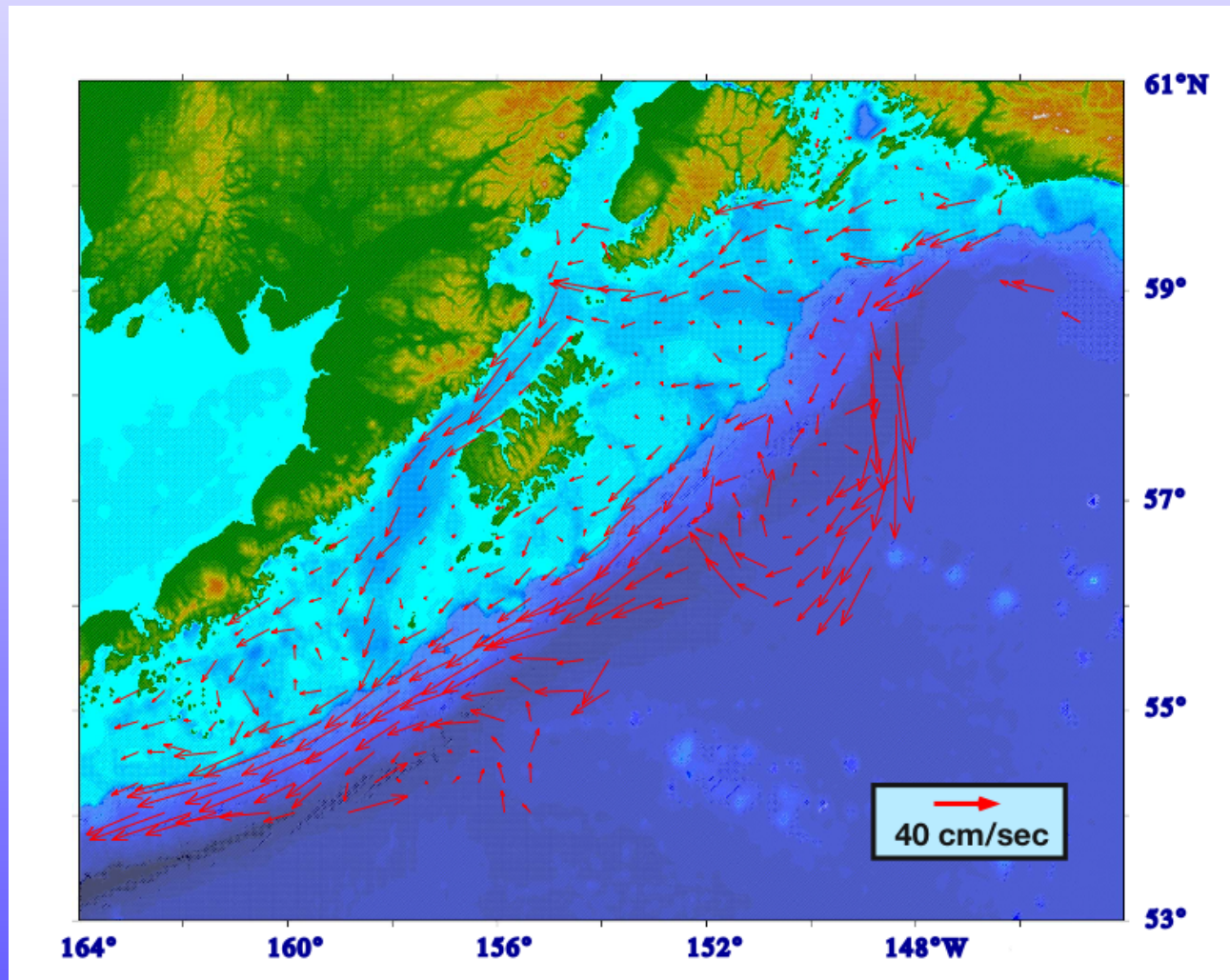
WGOA: Near Bottom Temperatures



Currents

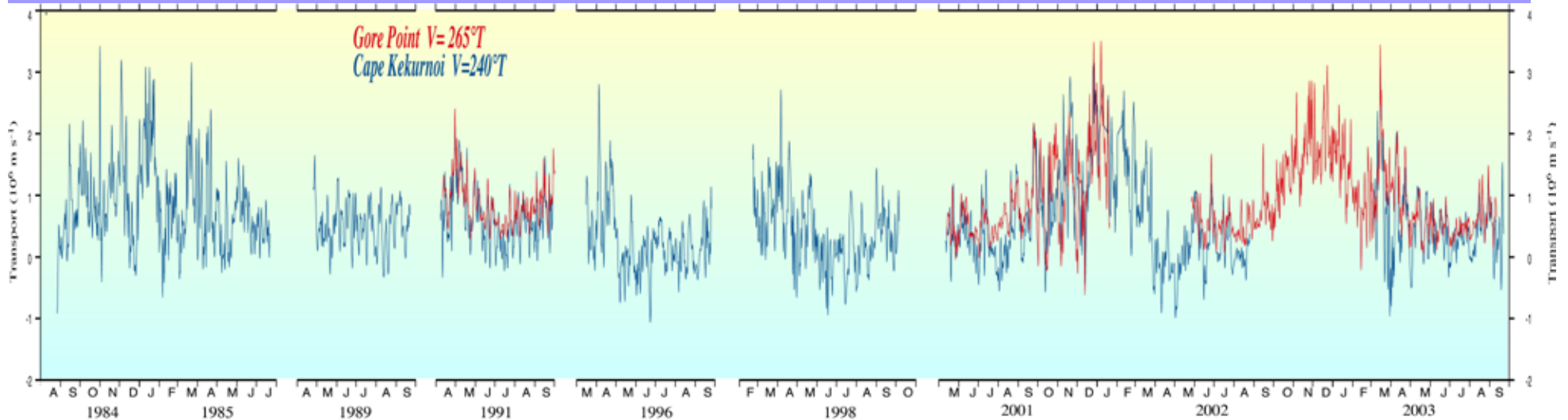


Mean Currents (40 m)

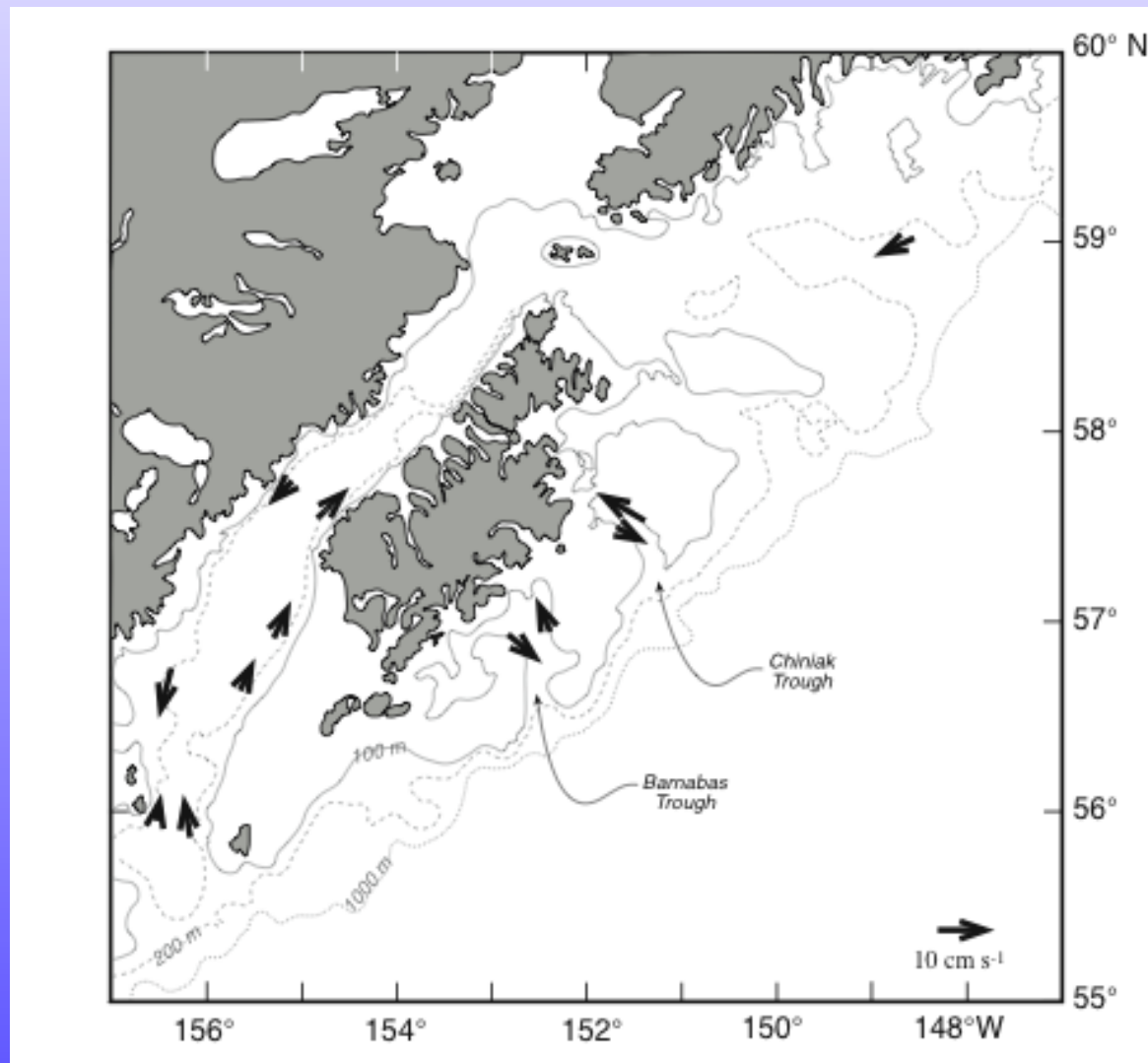




Transport: Gore Point and Shelikof Strait

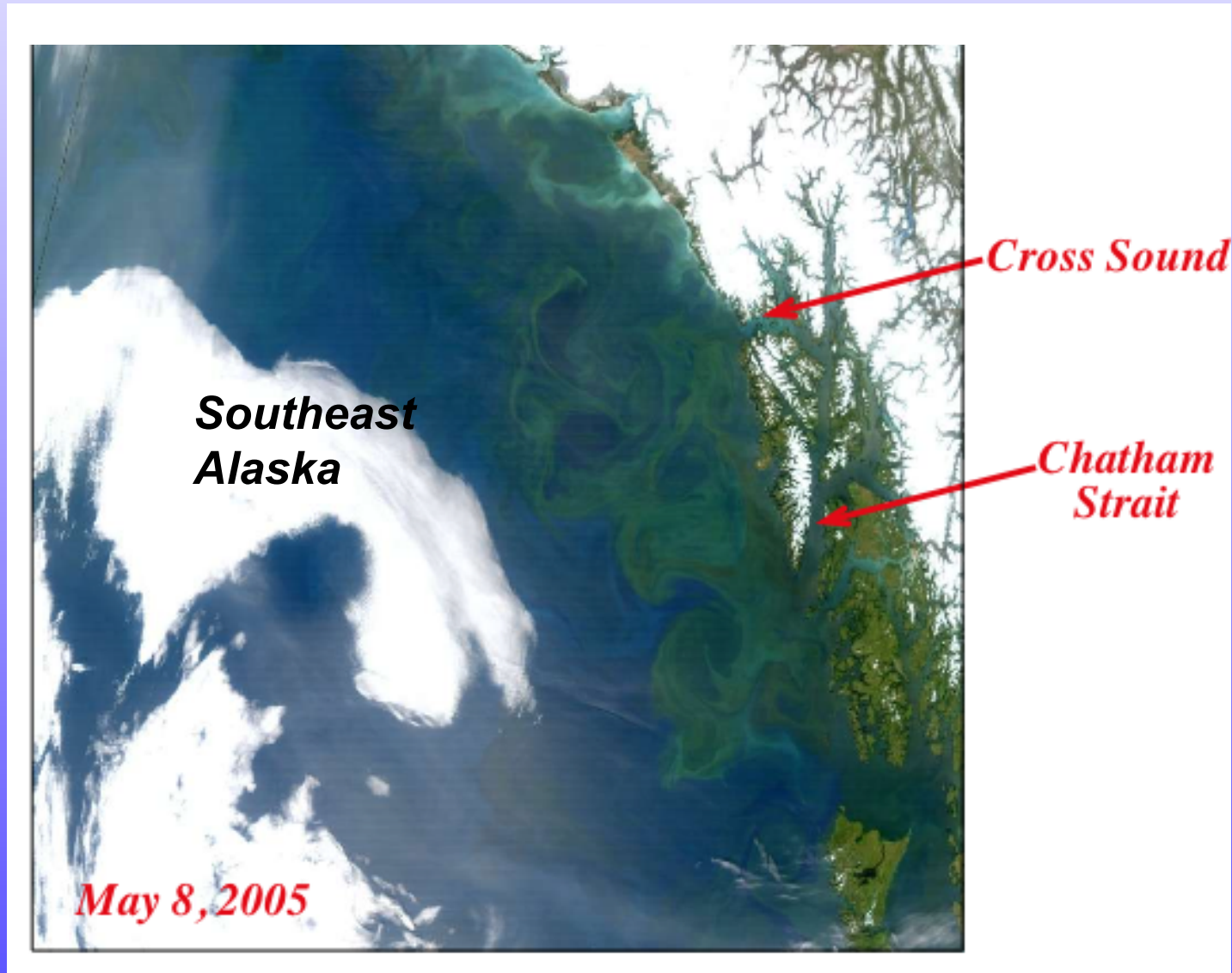


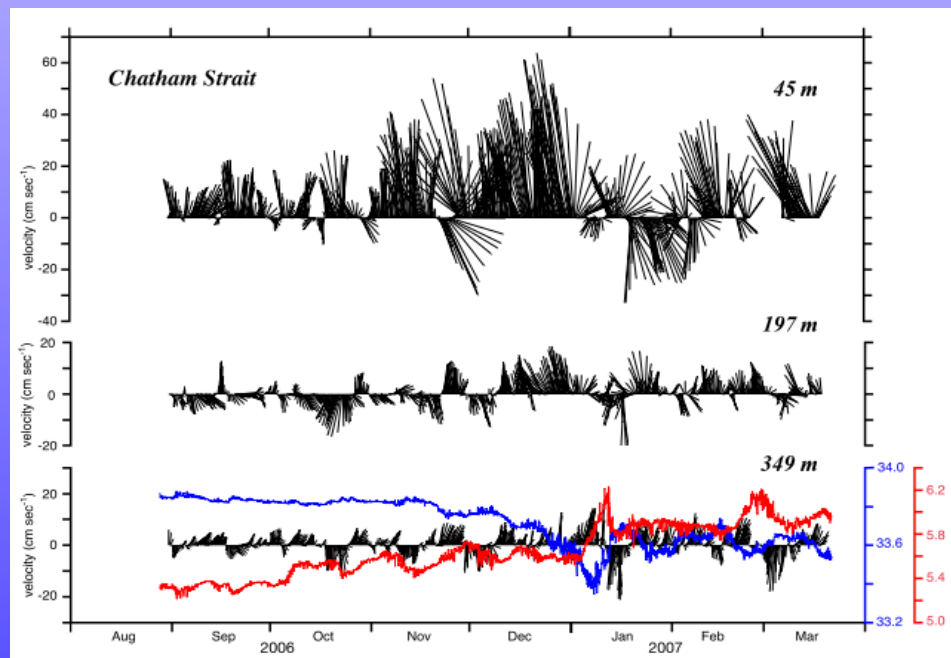
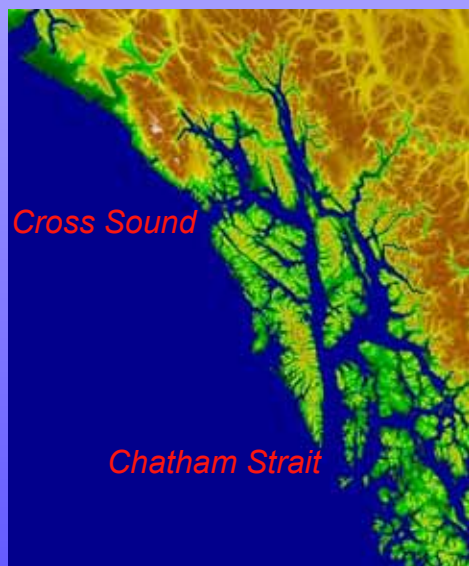
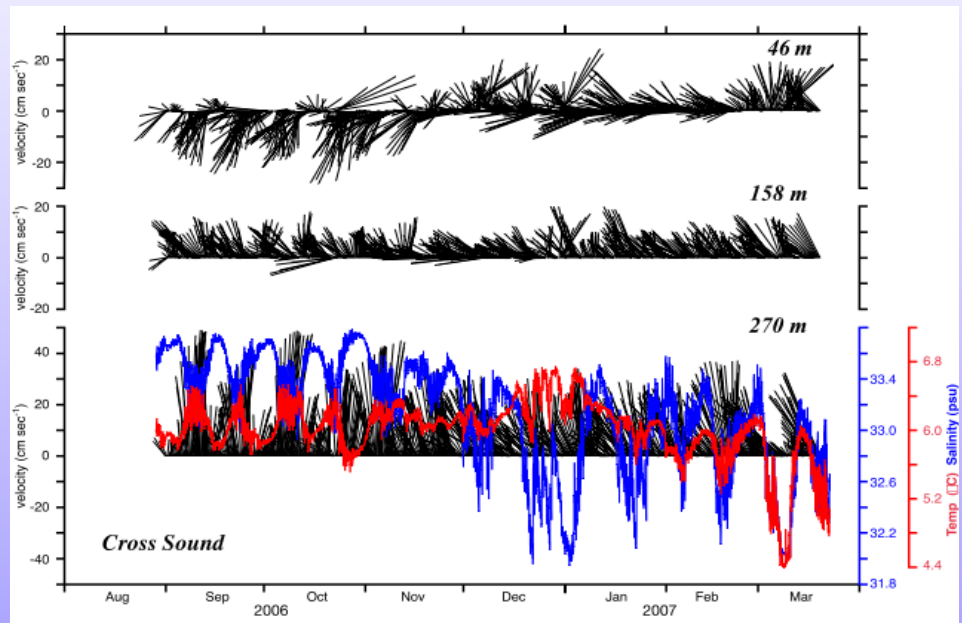
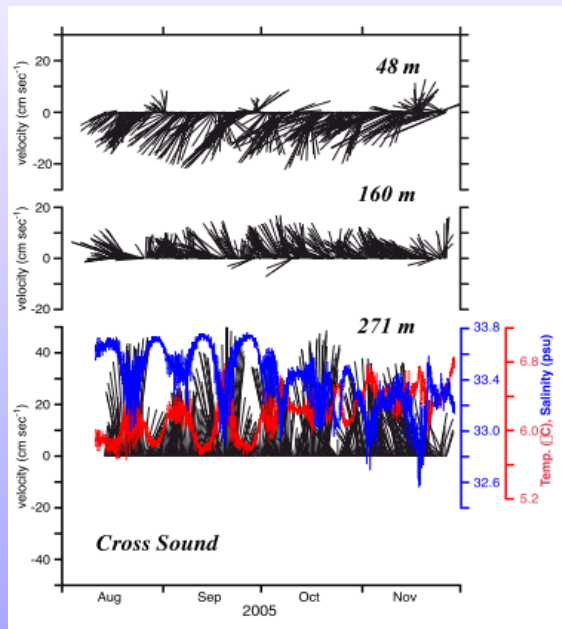
Near-bottom Flow



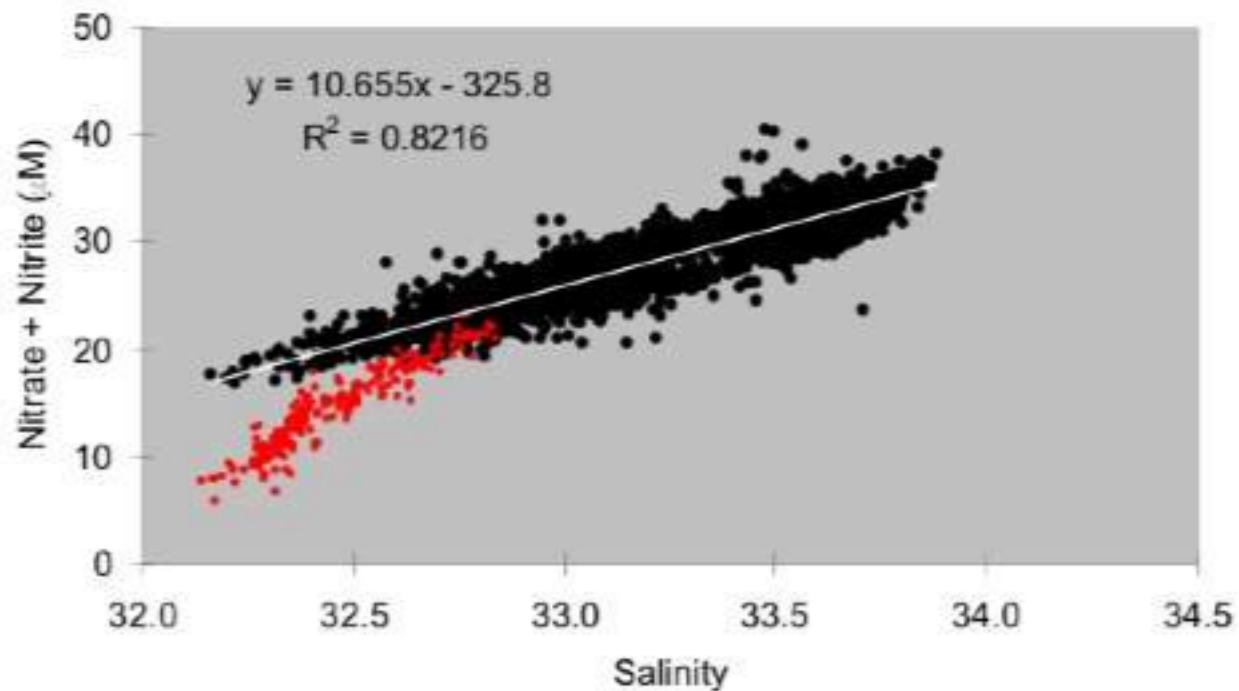
movie

EGOA: Southeast Alaska



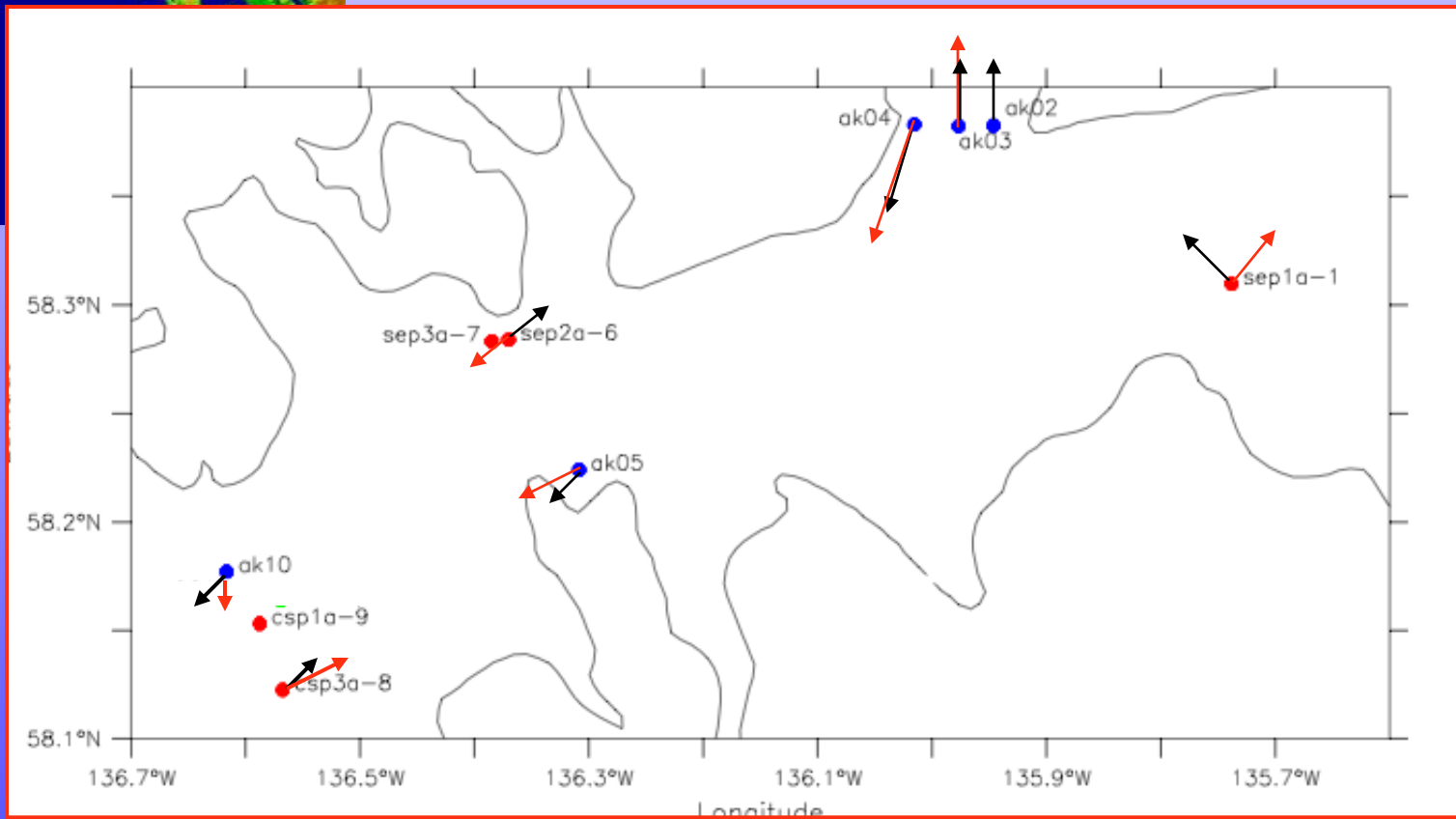
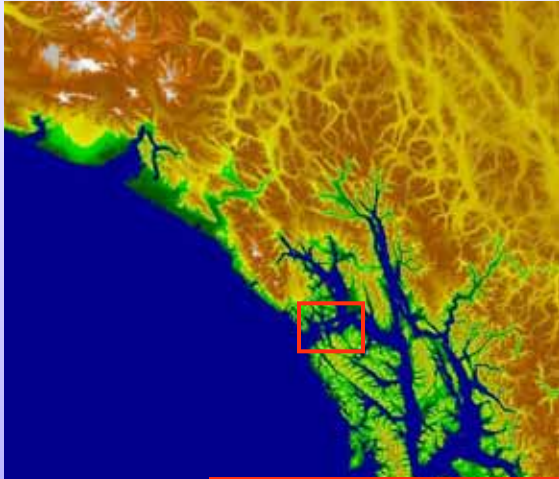


Salinity - Nutrient Relationship at Depth



Relationship of nutrients (nitrate plus nitrite) to salinity established from data taken below the photic zone from the northern Gulf to the Aleutians. Provided by Calvin Mordy).

2010 - Currents



So, what does this imply about the importance of bottom-up forcing of these ecosystems?

